ABSTRACT OF THE DISCLOSURE

Light emitted from an illumination optical system is guided to a photomask where a pattern is formed of an optical member including a light transmission pattern as a diffraction grating pattern, in which a light transmission part and a opaque part are repeated in a finite period and a periphery of the light transmission pattern is shielded by a opaque area, such that a plurality of ratios are given between the light transmission part and the opaque part. Diffraction light, which has passed through the photomask, is irradiated on a projection optical system, thereby to transfer a pattern reflecting an intensity distribution of the diffraction light to a wafer. A change of transmittance depending on a light path of the projection optical system is measured, based on a pattern image of the diffraction light transferred to the wafer. Pattern transfer is carried out in a non-conjugate state.